sives have more eccentric plaques. These findings suggest impaired vascular remodeling in hypertension and diabetes.

11:00

702-3 Coronary Arterial Remodeling In Different Settings of Atherosclerotic Plaques

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Coronary arterial remodeling has been considered as a compensatory mechanism in the process of atherosclerosis. It remains unclear what is the situation of this process in different characters of atherosclerotic lesions. Intravascular ultrasound (IVUS) was performed in 131 patients before any coronary interventions, the vessel and plaque areas and the percent of stenoses of 209 segments were measured. The relationships between plaque size, vessel size and percent stenosis in different characters (morphology and composition) of plaques were analysed. Compensatory coronary enlargement begins in the early stage of atherosclerosis in eccentric plaques but it begins when the stenosis exceeds 80% in concentric plaques. No effect of the calcium deposits on this compensatory process was found.

Plaque character	Regression	r
Eccentric:		
% stenosis-plaque size	$Y = 30.6 + 2.6x$	0.07
Vessel size-plaque size	$Y = 4.9 + 2.2x - 0.12x^2 + 0.002x^3$	0.48
Concentric:		
% stenosis-plaque size	$Y = -22.3 + 17.6x - x^2 + 0.02x^3$	0.81
Vessel size-plaque size	$Y = 20.1 - 2.4x + 0.2x^2 - 0.004x^3$	0.83

Conclusion: Coronary arterial remodeling behaves in a different way in atherosclerotic lesions with different characters. It occurs in the early stage of atherosclerosis in the case of eccentric lesions while occurs only in the very late stage in the case of concentric lesions.

11:15

702-4 Time Course of Geometric Remodeling After Coronary Angioplasty: Balloon Angioplasty Versus Directional Coronary Atherectomy

Takeshi Kimura, Satoshi Kaburagi, Hiroyoshi Yokoi, Yoshihisa Nakagawa, Masakiyo Nobuyoshi, Gary S. Mintz, Jeffery J. Popma, Martin B. Leon. *Kitakyushu, Kokura Memorial Hospital, Japan; Washington Hospital Center, Washington DC*

To compare the time course of geometric remodeling between Balloon Angioplasty (BA) and Directional Coronary Atherectomy (DCA), prospective serial intravascular ultrasound examination (motorized pullback @ 0.5 mm/sec) was performed at pre-and post-procedure and at 24 hours, 1 and 6 months after the procedure. Serial studies with adequate ultrasound images were completed in 61 lesions (BA 35, DCA 26)(87%) out of 70 eligible lesions. The anatomic slice selected for serial analysis had an axial location within the target lesion at the smallest pre-intervention lumen cross-sectional area.

	Pre	Post	24 Hrs	1 Mo	6 Mos
Vessel area (mm^2)					
BA	13.92 ± 4.35*	15.41 ± 4.53*	16.1 ± 4.32*	17.79 ± 4.6*	14.95 ± 4.15*
	— P = 0.0002 —		— P = 0.0001 —		— P = 0.0001 —
DCA	17.64 ± 5.99	19.55 ± 5.86	20.69 ± 6.01	21.58 ± 5.89	18.44 ± 6.75
	— P = 0.0001 —		— P = 0.0043 —		— P = 0.0001 —
Lumen area (mm^2)					
BA	2.08 ± 0.73	5.61 ± 1.66*	5.5 ± 1.5*	6.83 ± 2.05*	4.1 ± 2.1*
	— P = 0.0001 —		— P = 0.0001 —		— P = 0.0001 —
DCA	2.19 ± 0.82	3.77 ± 1.81	9.17 ± 2.36	10.32 ± 2.69	5.99 ± 3.6
	— P = 0.0001 —		— P = 0.0039 —		— P = 0.0001 —

*P < 0.01 vs DCA

Vessel size and acute lumen gain were significantly greater in the DCA group. Vessel expansion was responsible for 43% of acute lumen gain in the BA group and 29% in the DCA group. Reduction of plaque volume (compression or removal) was responsible for 57% of acute lumen gain in the BA group and 71% in the DCA group. Despite these differences in the mechanisms and magnitude of acute lumen gain, time course of geometric remodeling (early compensatory enlargement and late shrinkage) was similar after both BA and DCA.

11:30

702-5 Role of Intravascular Ultrasound in Predicting Anatomic Success After Balloon Angioplasty of the Femoropopliteal Artery

Elma J. Gussenhoven, the EPISODE study group. *Erasmus University Rotterdam and the ICIN, The Netherlands*

One aim of the multicenter study EPISODE (Evaluation Peripheral Intravascular Sonography On Dotter Effect) was to determine intravascular ultrasound (IVUS) predictors of anatomic success and restenosis of balloon angioplasty (PTA). We studied 96 patients (63 M, 33 F; median age 67 yr, range 36–93) with IVUS. The dilated segment was examined systematically before and after PTA with 1 cm interval between the cross-sections. Qualitative analysis included lesion morphology and topography before PTA and dissection and media rupture after PTA. Quantitative analysis included free lumen area (FLA), media-bounded area (MBA) and percentage area stenosis (%S). Of each patient the cross-section with the smallest FLA seen before and after PTA was selected for analysis. Initial success (within 1 month) and continuing success (at 6 months) of PTA was based on duplex examination of the dilated segment. PSV ratio < 2.5 was considered as success. At 1 month follow-up failure of PTA was evidenced in 19 of 96 patients. Significant differences were encountered between the initial success and failure group after PTA for FLA (12.0 vs 9.9 mm^2), %S (57% vs 66%), increase in FLA (6.8 vs 5.5 mm^2) and decrease in %S (–24% vs –15%). At 6 months, restenosis was evidenced in 18 of 77 patients. No significant differences were encountered between the continuing success and restenosis group. This IVUS study reveals predictors responsible for initial anatomic failure. Conversely, no predictors were found for restenosis.

11:45

702-6 Usefulness of Intravascular Ultrasound in Differentiating Thrombosed Aortic Dissection From Aortic Aneurysm With Mural Thrombus

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It remains difficult to differentiate thrombosed false lumens of aortic dissections from mural thrombi associated with aortic aneurysms, especially when the diameter of the aorta is small. To determine the diagnostic accuracy of intravascular ultrasound (IVUS:8F,15-MHz) in differentiating thrombosed aortic dissections from aortic aneurysms with mural thrombi, 13 patients with thrombosed aortic dissections and 12 patients with aortic aneurysms were examined. The diagnostic criteria of thrombosed dissection included the presence of at least two findings of the followings: 1) a thin layered appearance (intimal flap) between the true lumen and the thrombus, 2) smooth continuation from the intact intima to the surface of the "thrombus" and 3) smooth surface of the "thrombus". The diagnoses were confirmed by intraoperative findings in all cases. *Results.* According to these criteria (presence of at least two of the three findings), the sensitivity and specificity for the diagnosis of thrombosed aortic dissections were 92% and 83%, respectively, with an accuracy of 88%. *Conclusion.* IVUS is a useful method to differentiate thrombosed aortic dissections from aortic aneurysms with mural thrombi.

703 Dilated Cardiomyopathy Insights Into Prognosis

Monday, March 25, 1996, 10:30 a.m.–Noon
Orange County Convention Center, Room 230B

10:30

703-1 Survival in Dilated Versus Non-Dilated Congestive Cardiomyopathy

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Recent reports have justified the division of congestive cardiomyopathy into two categories: Dilated cardiomyopathy (DC) and non-dilated or borderline dilated cardiomyopathy (NC). The extremely meager data on the prognosis of DC versus NC are conflicting, as to whether NC is a mild or early form of DC or not, with longer life expectancy than DC. In 1989 we identified 42 men with diffuse LV hypokinesis and decreased effort tolerance; 23 had DC with LV dimension > 56 mm, while 19 had NCDMP with LV dimension ≤ 56 mm. Mean age and fractional shortening were not different in these two groups. 16 normal control men were also studied.